SEQUENCE LISTING

(1) GENERAL INFORMATION:

- (i) APPLICANT:
 - (A) NAME: NESTEC S.A
 - (B) STREET: AVENUE NESTLE 55,
 - (C) CITY: VEVEY
 - (D) STATE OR PROVINCE: VAUD
 - (E) COUNTRY: SWITZERLAND
 - (F) POST CODE: 1800
 - (G) TELEPHONE: 021 924 26 09
 - (H) FAX: 021 924 28 80
- (ii) TITLE OF THE INVENTION: COFFEE MANNANASE
- (iii) NUMBER OF SEQUENCES: 7
- (iv) COMPUTER READABLE FORM
 - (A) MEDIUM TYPE: Floppy disk
 - (B) COMPUTER: IBM PC compatible
 - (C) OPERATING SYSTEM: PC-DOS/MS-DOS
 - (D) SOFTWARE: PatentIn Release #1.0, Version #1.30 (EPO)

(2) INFORMATION FOR SEQ ID NO: 1:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 1613 base pairs
 - (B) TYPE: nucleotide
 - (C) STRANDEDNESS: double
 - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: cDNA
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 1:

						60
TTCATTAAAA	ATGGCCTTCT	CCAGGAGAAG	CAATATCAGC	AACTTCTCTT	GCTGCTTCCT	60
ITCATTABLE		TO CATTOCO A	ADATCATATA	GTTTCTTCTT	CTGCTTCGCG	120
TGTGATCATC	GTCTTATCCC	IGCATIOCGA	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		TTTTCAATGG	180
CTTTATTCAA	ACAAGAGGAA	CCCGATTCGT	GTTAGGTGGC	TACCCATTT	TTTTCAATGG	
	TACTGGATGA	TGCATGTTGC	AGCTGAGCCA	AGTGAAAGGC	ATAAAATTTC	240
GTTCAACICC	TACTOCATOA		CCTTACTCTT	TGCCGGACAT	GGGCATTCAG	300
CAATGTATTT	CGCGAGGCTG	CTGCTACAGG	GCTIMCIGTT		GGGCATTCAG	360
-armacmccc	GATCGAGCTC	TTCAAATGTC	CCCCGGAGTC	TATGATGAAC	GTGTCTTTCA	360

			CAACTATGGA	CTTCACTTAA	TCCTGAGTCT	420
GGCCCTTGAT	TTTGTGGTAT	CGGAAGCAAG	GAAGIAIGGA		TCCTGAGTCT	480
GACCAACAAC	TACAAGGACT	TTGGAGGAAG	GACGCAATAC	GTGACGTGGG	CTAAAAATGC	
севастасаа	GTGAATAGCG	ATGATGATTT	TTACACCAAG	AATGCTGTCA	AGGGATATTA	540
	DAAADAATTA	TGTTGACTAG	GATCAACACA	ATCAGTAGAG	TTGCATATAA	600
CAAGAATCAC	ATTAMOTERIO	CATCCCACCT	AATAAATGAA	CCTCGTTGCC	AGGTCGACTT	660
AGATGATCCA	ACAGTCATGG	CAIGGGAGCI	AAIAAMAAAA	N CTTN CGTCA	AATCACTCGA	720
CTCCGGAAAA	ACCTTAAATG	CTTGGGTTCA	AGAAATGGCA	ACTIACGICA	AATCACTCGA	780
TAACAAACAC	CTTCTAGAAA	TAGGCATGGA	GGGATTCTAC	GGAGATTCAA	TGCCAGGCAA	
AAGCAGTAC	AATCCTGGAT	ACCAAGTGGG	CACAGATTTT	ATCACCAATA	ATCTTATCAA	840
- GAGAMACAT	TTTGCAACCA	TTCATGCATA	TCCCGATATT	TGGCTGTCTG	GACAGAGCGA	900
AGAGATAGAT	171001210011	TCACAAGGTG	GATGACCAGT	CACTCCACAG	ACTCTAAGAC	960
CGGTGCACAG	AIGAIGIICA	IGAGAAGGIG	» mmmcccc » » »	TCAAGTAAAG	ATCCAGGATA	1020
CATACTTAAA	AAACCATTGG	TTCTCGCTGA	ATTIGGGAAA	TOTAL TARGET	ATCCAGGATA	1080
CAGTTTATAT	GCCAGGGAGT	CATTCATGGC	CGCAATTTAC	GGTGATATET	ACAGGTTTGC	1140
TAGAAGAGGA	GGCATTGCAG	GTGGATTGGT	TTGGCAAATC	CTGGCCGAGG	GAATGCAACC	
CTACGCAGAT	GGGTATGAAA	TTGTCTTGTC	TCAGAACCCA	TCAACCGGAC	GAATCATAAG	1200
GIACGCAGA	CCACAAATGA	CTTCACTCGA	CCATATGAGC	AGTAATAGAA	CCAATTCTCA	1260
CCAACAGICI	COACAAATON	GD D D CCD CCD	GTGATCAGTC	TTCCAGAAAG	TCTACTTGAG	1320
AAGCAACAAA	CTGCGCAATT	CAAAGGAGCA	GARAGA A ATT	TCCATTATAT	TCGGAGTGTT	1380
TTTGTTCGTA	TGTCAAAATC	AAGTATCAAC	CATAGAAATI	1CCA11.	TCGGAGTGTT	1440
TTAGTCAAGT	TCTAGTAATA	CCGCTGGAGT	CATGATAGTT	ATGACAGTAF	TACCGCTGGA	1500
GTCAAGTTCT	AGTAATACCG	TTGGAGTCAA	GTTATGATAG	TTATTTAAA	ATTAGTATTT	
TATTACAAAT	TTGTTATTGT	TGTGAGACTT	GTTTATTAAG	TAAATGGAA	A GTCTTATCAT	1560
TATTATCATT	TCACAAAAAA	ААААААА	АААААААА	AAAAAAAA .	AAA A	161
TATTATCATT	IGAGAAAAA					

(2) INFORMATION FOR SEQ ID NO: 2:

- (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 427 amino acids
 - (B) TYPE: amino acid
 - (C) STRANDEDNESS: [lacuna]
 - (D) TOPOLOGY: linear
- (ii) MOLECULE TYPE: protein
- (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 2:

 Met
 Ala
 Phe
 Ser
 Arg
 Ser
 Asn
 Ile
 Ser
 Asn
 Phe
 Ser
 Cys
 Phe

 1
 I
 I
 I
 I
 I
 I
 I
 I
 I
 I
 I
 I
 I
 I
 I
 I
 I
 I
 I
 I
 I
 I
 I
 I
 I
 I
 I
 I
 I
 I
 I
 I
 I
 I
 I
 I
 I
 I
 I
 I
 I
 I
 I
 I
 I
 I
 I
 I
 I
 I
 I
 I
 I
 I
 I
 I
 I
 I
 I
 I
 I
 I
 I
 I
 I
 I
 I
 I
 I
 I
 I
 I
 I
 I
 I
 I
 I
 I
 I
 I
 I
 I
 I
 I
 I
 I
 I
 I
 I
 I
 I
 I
 I
 I
 I
 I
 I
 I
 I
 I
 I

Glv	Gly	Tyr	Pro	Phe	Phe	Phe	Asn	Gly	Phe	Asn	Ser	Tyr	Trp	Met	Met
,	50	_,_				55					60				
uie		Δla	Ala	Glu	Pro	Ser	Glu	Arg	His	Lys	Ile	Ser	Asn	Val	Phe
65	• • • •	••••			70					75					80
	Clu	e [4	בומ	Δla		Glv	Leu	Thr	Val	Cys	Arg	Thr	Trp	Ala	Phe
AIG	GIU	ATU	AIu	85		,			90	_				95	
0	7.00	Clve	Clu		Ara	Δla	Leu	Gln	Met	Ser	Pro	Gly	Val	Tyr	Asp
Ser	Asp	Gly	100	AJP	AL 9			105					110		
~1	D.r.ca	V a l		Gln	Ala	Leu	Asp	Phe	Val	Val	Ser	Glu	Ala	Arg	Lув
GIU	Arg	115	FIIC	0111	71.1.0		120					125			
m	C111		Uia	T.e.11	Tle	Leu		Leu	Thr	Asn	Asn	Tyr	Lys	Asp	Phe
TYL	130	Vai	1113	DCG	110	135					140				
01.		λτα	Thr	Glo	Tvr		Thr	Trp	Ala	Lys	Asn	Ala	Gly	Val	Gln
	GIY	Arg	1111	G 1 11	150			•		155					160
145	λen	Ser	Asn	Asp.		Phe	Tyr	Thr	Lys	Asn	Ala	Val	Lув	Gly	Tyr
Vai	ASII	361	АЗР	165		•	1		170					175	
ጥህዮ	Lvs	Asn	His		Lys	Lys	Val	Leu	Thr	Arg	Ile	Asn	Thr	Ile	Ser
1 7 1	, .		180		1	-		185					190		
Δra	Val	Ala		Lys	Asp	Asp	Pro	Thr	Val	Met	Ala	Trp	Glu	Leu	Ile
		195	•	•	_		200					205			
Asn	Glu		Arq	Cys	Gln	Val	Asp	Phe	Ser	Gly	Lys	Thr	Leu	Asn	Ala
	210		_	•		215					220				
Trp	Val	Gln	Glu	Met	Ala	Thr	Tyr	Val	Lys	Ser	Leu	Asp	Asn	Lys	His
225					230					235					240
	Leu	Glu	Ile	Gly	Met	Glu	Gly	Phe	Туг	Gly	Asp	Ser	Met	Pro	Gly
				245					250					255	
Lys	Lys	Gln	Tyr	Asn	Pro	Gly	Tyr	Gln	Val	Gly	Thr	Asp	Phe	· Ile	Thr
			260					265	ı				270)	
Asn	Asn	Leu	Ile	Lys	Glu	Ile	Asp	Phe	Ala	Thr	: Ile	His	Ala	туг	Pro
		275					280					285	i		
Asp	Ile	Trp	Leu	Ser	Gly	Gln	Ser	Asp	Gly	/ Ala	Glr	Met	Met	Phe	Met
	290					295					300)			
Arg	Arg	Trp	Met	Thr	Ser	His	Ser	Thr	Asp	Ser	Lys	Thi	: Ile	e Lev	Lys
305					310					315	5				320
Lys	Pro	Leu	Val	Leu	Ala	Glu	Phe	Gly	Lys	s Sei	Ser	Lys	a Asp) Pro	Gly
				325					330					335	

Tyr Ser Leu Tyr Ala Arg Glu Ser Phe Met Ala Ala Ile Tyr Gly Asp 350 340 Ile Tyr Arg Phe Ala Arg Arg Gly Gly Ile Ala Gly Gly Leu Val Trp 360 Gln Ile Leu Ala Glu Gly Met Gln Pro Tyr Ala Asp Gly Tyr Glu Ile 375 Val Leu Ser Gln Asn Pro Ser Thr Gly Arg Ile Ile Ser Gln Gln Ser 395 390 Arg Gln Met Thr Ser Leu Asp His Met Ser Ser Asn Arg Thr Asn Ser 410 405 Gln Ser Asn Lys Leu Arg Asn Ser Lys Glu Gln 425 420

- (2) INFORMATION FOR SEQ ID NO: 3:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 20 base pairs
 - (B) TYPE: nucleotide
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: other nucleic acid
 - (A) DESCRIPTION: /desc = "SYNTHETIC OLIGONUCLEOTIDE"
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 3:

GGNATGGARG GNTTYTAYGG

.

20

- (2) INFORMATION FOR SEQ ID NO: 4:
 - (i) SEQUENCE CHARACTERISTICS:
 - (A) LENGTH: 15 base pairs
 - (B) TYPE: nucleotide
 - (C) STRANDEDNESS: single
 - (D) TOPOLOGY: linear
 - (ii) MOLECULE TYPE: other nucleic acid
 - (A) DESCRIPTION: /desc = "SYNTHETIC OLIGONUCLEOTIDE"
 - (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 4:

TTTTTTTTTT TTTTT

15

(2) INFORMATION FOR SEQ ID NO: 5: (i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 17 base pairs (B) TYPE: nucleotide (C) STRANDEDNESS: single (D) TOPOLOGY: linear (ii) MOLECULE TYPE: other nucleic acid (A) DESCRIPTION: /desc - "SYNTHETIC NUCLEOTIDE" (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 5: 17 AAATCTGTGC CCACTTG (2) INFORMATION FOR SEQ ID NO: 6: (i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 17 base pairs (B) TYPE: nucleotide (C) STRANDEDNESS: single (D) TOPOLOGY: linear (ii) MOLECULE TYPE: other nucleic acid (A) DESCRIPTION: /desc - "SYNTHETIC NUCLEOTIDE" (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 6: 17 GTAAAACGAC GGCCAGT (2) INFORMATION FOR SEQ ID NO: 7: (i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 17 base pairs (B) TYPE: nucleotide (C) STRANDEDNESS: single (D) TOPOLOGY: linear (ii) MOLECULE TYPE: other nucleic acid (A) DESCRIPTION: /desc - "SYNTHETIC NUCLEOTIDE" (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 7: 17 CAGGAAACAG CTATGAC (2) INFORMATION FOR SEQ ID NO: 8: (i) SEQUENCE CHARACTERISTICS:

- 5 -

(A) LENGTH: 21 amino acids (B) TYPE: amino acid (C) STRANDEDNESS: [lacuna] (D) TOPOLOGY: linear (ii) MOLECULE TYPE: protein (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 8: Ser Phe Asn Phe Val Lys Thr Arg Gly Thr Glu Phe Val Met Asp Xaa Arg Phe Leu Tyr Leu (2) INFORMATION FOR SEQ ID NO: 9: (i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 10 amino acids (B) TYPE: amino acid (C) STRANDEDNESS: [lacuna] (D) TOPOLOGY: linear (ii) MOLECULE TYPE: protein (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 9: Thr Trp Ala Phe Ser Asp Gly Gly Tyr Arg 10 (2) INFORMATION FOR SEQ ID NO: 10: (i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 17 amino acids (B) TYPE: amino acid (C) STRANDEDNESS: [lacuna] (D) TOPOLOGY: linear (ii) MOLECULE TYPE: protein (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 10:

Glu Tyr Asn Pro Gly Tyr Gln Val Gly Thr Asp Phe Ile Ser Asn Asn Arg (2) INFORMATION FOR SEQ ID NO: 11: (i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 36 base pairs (B) TYPE: nucleotide (C) STRANDEDNESS: single (D) TOPOLOGY: linear (ii) MOLECULE TYPE: other nucleic acid (A) DESCRIPTION: /desc - "SYNTHETIC NUCLEOTIDE" (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 11: 36 GTCTTATCCC TGGATCCCGA AAATCATATA GTTTCT (2) INFORMATION FOR SEQ ID NO: 12: (i) SEQUENCE CHARACTERISTICS: (A) LENGTH: 40 base pairs (B) TYPE: nucleotide (C) STRANDEDNESS: single (D) TOPOLOGY: linear (ii) MOLECULE TYPE: other nucleic acid (A) DESCRIPTION: /desc - "SYNTHETIC NUCLEOTIDE" (xi) SEQUENCE DESCRIPTION: SEQ ID NO: 12: 40 GTACTCTGCA GACTTTCTGG AAGACTGATC ACTGCTCCTT